

IN THE CLAIMS:

1 1. (Currently Amended) A particulate matter analyzer comprising:
2 a collecting unit for collecting particulate matter in a sample gas of only a
3 predetermined size range on a filter;
4 a mass measuring unit for measuring mass of the particulate matter while on the
5 filter; and
6 a composition analyzing unit for analyzing composition of the particulate matter
7 while on the filter, wherein the measurement of mass and analysis of composition ~~[[is]]~~ are
8 performed ~~continuously~~ on the same collected particulate matter on the filter within the
9 particulate matter analyzer.

1 2. (Previously Presented) The particulate matter analyzer of Claim 1, wherein the
2 composition analyzing unit is configured to analyze the composition of the particulate matter by
3 irradiating a measuring spot formed on the filter with radioactive rays or electron beams.

1 3. (Previously Presented) The particulate matter analyzer of Claim 2, wherein the
2 collecting unit is configured to enable the sample gas to pass through the filter, thereby forming
3 the measuring spot on the filter, and the filter is made of a material which substantially does not
4 emit fluorescent x-rays.

1 4. (Original) The particulate matter analyzer of Claim 3, wherein the filter has an
2 antistatic electricity characteristic.

1 5. (Currently Amended) The particulate matter analyzer of Claim 3, wherein the
2 unit for collecting particulate matter includes a filter holding mechanism with a plurality of

individual filter holder units, and wherein the holder units ~~[[can]]~~ are progressively and automatically position individual filters at a sample taking station which permits the sample gas to pass through selected filters.

6. (Currently Amended) The particulate matter analyzer of Claim 1, wherein the mass measuring unit is configured to measure the mass of the particulate matter by using one of a beta-ray absorption method, a pressure loss method, and a light scattering method.

7-13. (Cancelled)

14. (Currently Amended) A system for collecting particulate matter in a fluid and analyzing mass of the particulate matter and its composition, comprising:

a collecting unit including a source of filter members for performing a plurality of sequential measurements and a sample fluid supplying unit for directing a predetermined amount of a sample to a filter member to separate particulate matter of a predetermined size range from the sample fluid;

a mass measuring unit for measuring the mass of the particulate matter ~~which~~ while on the filter member;

a composition analyzing unit for analyzing the composition of the particulate matter while on the filter member;

a transporting unit for moving one of the plurality of filter members from the sample fluid supplying unit to respectively the mass measuring unit and the composition analyzing unit; and

a controller unit for automatically enabling the collecting unit, mass measuring unit, composition analyzing unit, and transporting unit, wherein a plurality of measurements with

16 a plurality of filter members are carried out ~~continuously~~ on the particulate matter over a
17 predetermined time period .

1 15. (Original) The system of Claim 14, wherein the source of filter members includes
2 an elongated roll of filter material and a feeding reel unit which positions a predetermined length
3 of filter material to operatively engage the sample fluid supplying unit.

1 16. (Original) The system of Claim 14, wherein the source of filter members includes
2 a filter holding mechanism which rotates a plurality of individual filter members to operatively
3 engage the sample fluid supplying unit.

1 17. (Previously Presented) The system of Claim 14, wherein the filter members have
2 an antistatic characteristic.

1 18. (Original) The system of Claim 14, wherein the filter members include a
2 predetermined reference material other than a target material to be collected to enable a
3 calibration of the composition analyzing unit.

1 19. (Previously Presented) The system of Claim 14, wherein the mass measuring unit
2 and the composition analyzing unit are within the same housing and measure the particulate
3 matter at a same location within the housing.

1 20. (Cancelled)

1 21. (Previously Presented) The particulate matter analyzer of Claim 4, wherein the
2 filter includes a porous layer made of a fluororesin, and a gas-permeable reinforcing layer which
3 is provided on a surface of the porous layer.

1 22. (Previously Presented) The particulate matter analyzer of Claim 21, wherein the
2 reinforcing layer is made of a non-woven fabric which consists of any one or a plurality of
3 materials selected from polyethylene, polyethyleneterephthalate, nylon, polyester, and polyamide.

1 23. (Previously Presented) The particulate matter analyzer of Claim 22, wherein the
2 filter includes a predetermined reference material other than a target material to be collected to
3 enable a calibration of a particulate matter analyzer processing the collected target material on
4 the filter.

1 24. (Previously Presented) The system of Claim 14, wherein the filter members
2 include a non-woven fabric low in hygroscopicity.

1 25. (Previously Presented) The system of Claim 24, wherein the non-woven fabric
2 consists of one of polyethylene, polyethyleneterephthalate, nylon, polyester, and polyamide.

1 26. (Currently Amended) The system of Claim 14, wherein the filter members
2 include a porous layer of a glass fiber, a reinforcing layer, and a predetermined reference
3 material other than a target ~~matter~~ material to be collected to enable a reference comparison
4 when the collected particulate matter on one of the filter members is subjected to an analysis to
5 determine quantity of the target material.

1 27. (Currently Amended) A particulate matter analyzer comprising:
2 a collecting unit for collecting particulate matter in a sample gas including a size
3 separator unit for supplying a predetermined size and smaller of particulate matter, an elongated

4 filter member having an upper and a lower transporting unit for moving a predetermined length
5 of the filter member to receive the particulate matter from the size separator unit;

6 a mass measuring unit for measuring mass of the particulate matter as deposited
7 on the filter member;

8 a composition analyzing unit for analyzing composition of the particulate matter
9 as deposited on the filter member; and

10 a controller unit for automatically enabling the collecting unit, the mass
11 measuring unit, the composition analyzing unit, and the transporting unit to perform a plurality
12 of measurements on a series of predetermined lengths of the filter member automatically over a
13 predetermined time period without an operator.

1 28. (Currently Amended) The particulate matter analyzer of claim ~~[[29]]~~ 27 wherein
2 measurement of the mass and ~~analyzing~~ analysis of the composition is performed on the
3 deposited particulate matter on the filter member when a predetermined length of the filter
4 member is held stationary at one location by the transporting unit.

1 29. (Currently Amended) The particulate matter analyzer of claim ~~[[29]]~~ 27 wherein
2 the filter member includes, within each predetermined length of the filter member, a calibration
3 reference material to enable a calibration of the composition analyzing unit.

1 30. (Currently Amended) The particulate matter analyzer of claim ~~[[31]]~~ 27 wherein
2 the mass measuring unit and the composition analyzing unit are within a single housing and
3 measure the particulate matter at the same location on the filter member within the housing.

1 31. (Currently Amended) The particulate matter analyzer of claim ~~[[32]]~~ 27 wherein
2 the filter member has an antistatic electricity characteristic.